产品名称： Barasertib (AZD1152-HQPA)
产品别名：巴拉塞替-HQPA ；Barasertib-HQPA；AZD2811; INH-34

生物活性：

Description	Barasertib-HQPA (AZD2811) is a highly selective Aurora B inhibitor with an IC_{50} of 0.37 nM in a cell-free assay, and shows 3700-fold selectivity for Aurora B over Aurora A.
IC_{50} & Target	Aurora B
[1]	0.37 nM (IC_{50})
In Vitro	Barasertib-HQPA (AZD2811) displays >3000-fold selectivity for Aurora B as compared with Aurora A which has an IC50 of 1.368 μM.Barasertib-HQPA (AZD2811) has even less activity against 50 other serine-threonine and tyrosine kinases including FLT3, JAK2, and Abl. Barasertib-HQPA (AZD2811) inhibits the proliferation of hematopoietic malignant cells such as HL-60, NB4, MOLM13, PALL-1, PALL-2, MV4-11, EOL-1, THP-1, and K562 cells with IC50 of 3-40 nM, displaying appr 100-fold potency than another Aurora kinase inhibitor ZM334739 which has IC50 of 3-30 μM. Barasertib-HQPA (AZD2811) inhibits the clonogenic growth of MOLM13 and MV4-11 cells with IC50 of 1 nM and 2.8 nM, respectively, as well as the freshly isolated imatinib-resistant leukemia cells with IC50 values of 1-3 nM, more significantly compared with bone marrow mononuclear cells with IC50 values of >10 nM. Barasertib-HQPA (AZD2811) induces accumulation of cells with 4N/8N DNA content, followed by apoptosis in a dose- and time-dependent manner[2]. Barasertib-HQPA (AZD2811) treatment induces defective cell survival, polyploidy, and cell death in LNCaP cell line. AZD1152-HQPA also decreases expression of AR[3].
In Vivo	AZD1152 (10-150 mg/kg/day) significantly inhibits the growth of a variety of human solid tumor xenografts, including colon, breast, and lung cancers, in a dose-dependent manner[1]. Administration of AZD1152 (25 mg/kg) alone markedly suppresses the growth of MOLM13 xenografts, confirmed by the observation of necrotic tissue with infiltration of phagocytic cells[2].
Solvent&Solubility	***In Vitro:*** **DMSO : ≥ 22 mg/mL (43.34 mM)** **H_2O : < 0.1 mg/mL** (insoluble) * "≥" means soluble, but saturation unknown.

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	1.9702 mL	9.8511 mL	19.7021 mL
	5 mM	0.3940 mL	1.9702 mL	3.9404 mL
	10 mM	0.1970 mL	0.9851 mL	1.9702 mL

*请根据产品在不同溶剂中的溶解度选择合适的溶剂配制储备液；一旦配成溶液，请分装保存，避免反复冻融造成的产品失效。

储备液的保存方式和期限：-80°C, 6 months; -20°C, 1 month。 -80°C 储存时，请在 6 个月内使用，-20°C 储存时，请在 1 个月内使用。

In Vivo:

请根据您的实验动物和给药方式选择适当的溶解方案。以下溶解方案都请先按照 **In Vitro** 方式配制澄清的储备液，再依次添加助溶剂：

——为保证实验结果的可靠性，澄清的储备液可以根据储存条件，适当保存；体内实验的工作液，建议您现用现配，当天使用； 以下溶剂前显示的百分比是指该溶剂在您配制终溶液中的体积占比；如在配制过程中出现沉淀、析出现象，可以通过加热和/或超声的方式助溶

	1.请依序添加每种溶剂： 10% DMSO→40% PEG300 →5% Tween-80 → 45% saline Solubility: ≥ 2.5 mg/mL (4.93 mM); Clear solution 此方案可获得 ≥ 2.5 mg/mL (4.93 mM，饱和度未知) 的澄清溶液。 以 1 mL 工作液为例，取 100 μL 25.0 mg/mL 的澄清 DMSO 储备液加到 400 μL PEG300 中，混合均匀向上述体系中加入 50 μL Tween-80，混合均匀；然后继续加入 450 μL 生理盐水定容至 1 mL。 2.请依序添加每种溶剂： 10% DMSO→ 90% (20% SBE-β-CD in saline) Solubility: 2.5 mg/mL (4.93 mM); Precipitated solution; Need ultrasonic 此方案可获得 2.5 mg/mL (4.93 mM) 以 1 mL 工作液为例，取 100 μL 25.0 mg/mL 的澄清 DMSO 储备液加到 900 μL 20% 的 SBE-β-CD 生理盐水水溶液中，混合均匀。 3.请依序添加每种溶剂： 10% DMSO →90% corn oil Solubility: ≥ 2.5 mg/mL (4.93 mM); Clear solution 此方案可获得 ≥ 2.5 mg/mL (4.93 mM，饱和度未知) 的澄清溶液，此方案不适用于实验周期在半个月以上的实验。 以 1 mL 工作液为例，取 100 μL 25.0 mg/mL 的澄清 DMSO 储备液加到 900 μL 玉米油中，混合均匀。
References	[1]. Wilkinson RW, et al. AZD1152, a selective inhibitor of Aurora B kinase, inhibits human tumor xenograft growth by inducing apoptosis. Clin Cancer Res. 2007 Jun 15;13(12):3682-8. [2]. Yang, Jing., et al. AZD1152, a novel and selective aurora B kinase inhibitor, induces growth arrest, apoptosis, and sensitization for tubulin depolymerizing agent or topoisomerase II inhibitor in human acute leukemia cells in vitro and in vivo. Blood. 2007 Sep 15;110(6):2034-40. [3]. Zekri A, et al. AZD1152-HQPA induces growth arrest and apoptosis in androgen-dependent prostate cancer cell line (LNCaP) via producing aneugenic micronuclei and polyploidy. Tumour Biol. 2015 Feb;36(2):623-32.

实验参考：

Cell Assay	Cells are exposed to various concentrations of AZD1152 for 24 or 48 hours. Cell proliferation is measured by 3H-thymidine uptake (isotope added 6 hours before harvest), and the concentration that induced 50% growth inhibition (IC_{50}) is calculated from dose-response curves. Cell cycle analysis is performed by flow cytometry. Cell apoptosis is measured by annexin V–FITC apoptosis detection kit. [2]
Animal Administration	Human tumor xenografts are established by s.c. injecting 100 to 200 μL tumor cells (between 1×10^6 and 1×10^7 cells mixed 50:50 with Matrigel) on the flank. Animals are randomized into treatment groups (n=8-11 per group) when tumors reach a defined palpable size (0.2-0.3 cm^3 and 0.5-1 cm^3 for mice and rats, respectively). AZD1152 is prepared in Tris buffer (pH 9) and administered either as a bolus injection (i.v. or i.p.) or as a continuous 48-h infusion via s.c. implanted osmotic mini-pumps (two 24-h pumps implanted sequentially) in accordance with the manufacturer's instructions. Tumors are measured up to three times weekly with calipers, tumor volumes are calculated, and the data are plotted using the geometric mean for each group versus time. Tumor volume and tumor growth inhibition are calculated. Statistical analysis of any change in tumor volume is carried out using a Student's one-tailed t test (P value of <0.05 is considered to be statistically significant). [2]

References	[1]. Wilkinson RW, et al. AZD1152, a selective inhibitor of Aurora B kinase, inhibits human tumor xenograft growth by inducing apoptosis. Clin Cancer Res. 2007 Jun 15;13(12):3682-8. [2]. Yang, Jing., et al. AZD1152, a novel and selective aurora B kinase inhibitor, induces growth arrest, apoptosis, and sensitization for tubulin depolymerizing agent or topoisomerase II inhibitor in human acute leukemia cells in vitro and in vivo. Blood. 2007 Sep 15;110(6):2034-40. [3]. Zekri A, et al. AZD1152-HQPA induces growth arrest and apoptosis in androgen-dependent prostate cancer cell line (LNCaP) via producing aneugenic micronuclei and polyploidy. Tumour Biol. 2015 Feb;36(2):623-32.